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ABSTRACT

The relationships of children's perceptions of the causes of academic success or failure to achievement behavior and to reading ability were examined using two measures: Crandall's Intellectual Achievement Responsibility Scale (IAR), and a measure of students' causal attributions relating to performance of a single, specific task. Subjects were fifth grade boys of good, average, or poor reading ability who were later assessed on a reading task in which success or failure was manipulated. An assessment was also made of the subjects' initial expectations of success, persistence in the face of difficulty, and causal attributions for success or failure in the reading task which had a manipulated outcome. The IAR yielded scores representing total internal locus of control, internality for success, and internality for failure, as well as subscores reflecting causal attributions of ability or effort. IAR results demonstrated poor convergent validity with the task-specific causal attribution measure. The task-specific measure appeared to have greater predictive validity in relation to reading test performance and to general reading ability, than the IAR, which measured a general or global perception of locus of control. (Author/GDC)

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General versus Task-Specific Measures of Children's Causal Attributions: Their Relationship to Achievement Behavior and Reading Ability

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Abstract

The relationships of children's perceptions of the causes of academic success and failure to achievement behavior and reading ability were examined using Crandall's Intellectual Achievement Responsibility Scale (IAR) and an in vivo, task-specific measure of causal attributions. The IAR was administered to boys of relatively good, average, and poor reading ability who were later assessed on a reading task in which success and failure was manipulated. Results generally supported predictions, with the two measures showing poor convergent validity, and the task-specific measure demonstrating greater predictive validity in relation to performance measures and reading ability. Implications for future research are discussed.

General versus Task-Specific Measures of Children's Causal Attributions: Their Relationship to Achievement Behavior and Reading Ability

Recent years have seen a proliferation of theory and research concerned with the functional relationship between children's perceptions of the causes of academic successes and failures, and their achievement behavior in school-related contexts (see Weiner, 1977; 1979, for reviews). Children's causal attributions have been shown by empirical investigations to be related to their expectations of success (e.g., Dweck, 1975), their motivation and persistence on academic tasks (e.g., Andrews & Debus, 1978), their self-concepts (e.g., Ames, 1978), and learned helplessness in children with reading difficulties (Butkowsky & Willows, in press). Studies have also demonstrated that the modification of children's causal perceptions may be helpful in enhancing their expectations of success and their motivation and persistence on academic tasks (Chapin & Dyck, 1976; Dweck, 1975). Increasingly, this literature has become a source of great interest and excitement to educators and clinicians who are sensitive to the potential for practical application in the school setting (e.g., Thomas, 1980).

Despite the burgeoning number of empirical investigations of children's causal attributions appearing in the journals, little is known about the reliability and validity of their assessment. Indeed, this literature may be characterized by a lack of

concern with the reliability and validity of measurement methods. Moreover, a survey of this literature reveals considerable variability and little consistency between studies in the methods employed to assess children's causal perceptions of the causes of academic successes and failures.

In one early study, for example, Friend and Neale (1972) used two methods to measure both the amount of ability, effort, etc. fifth-grade children felt they had demonstrated on a reading task, and the relative importance of each of the causal factors (ability, effort, task difficulty, and luck) in mediating their performance. In the first method, subjects were asked to remove from 1 to 9 poker chips from a box placed in front of them, each box representing a different causal factor. Children were instructed to remove the number of chips that corresponded to the amount of ability, effort, etc. they felt they had demonstrated on the task (e.g., very skillful = 7, 8, or 9 chips). In the second method, children were presented with cards on which each of the causal attributional statements were printed, and asked to rank them in terms of their importance in determining the outcome of their performance (which was manipulated by false feedback). In a more recent study, Nicholls (1979) assessed children's causal attributions of success and failure in reading by having them recall the reasons for past successes and failures on reading tasks. Children were presented with a printed sheet that included each possible pairing of four causes for success and failure (ability, effort,

task difficulty, and luck) and were asked to select one cause from each pair. Attribution scores for success and failure represented the number of times each factor was chosen. Butkowsky and Willows (in press), in contrast to both of the above studies, assessed children's causal attributions immediately following actual success or failure on a reading task. After performing on a "reading test", children were simply presented with four cards on which each of four possible attributional statements (representing once again the causal factors of ability, effort, task difficulty, and luck) were printed in first-person format (e.g., "I'm good at this."). They were then asked to choose the "card or cards that say why you think you did (did not do) so well on this reading test" Attributions were then scored on two scales that reflected the causal dimensions suggested by Weiner (1974), i.e., internal-external and stable-unstable.

There are several dimensions on which the above and other studies vary with respect to the measurement of causal attributions. Some investigations employ global, questionnaire-type measures of children's causal attributions for performance on general skill tasks (e.g., Dweck & Reppucci, 1973), while others assess children's specific causal attributions for success and failure on specific academic tasks (e.g., Nicholls, 1979). Studies differ with respect to whether causal attributions are assessed in response to hypothetical (e.g., Nicholls, 1976), recalled (e.g., Nicholls, 1979), or actually

experienced outcomes (e.g., Butkowsky & Willows, in press), whether paper-and-pencil measures or children's verbal responses to interview-type questions are employed, and whether the measure itself is open-ended and unstructured (e.g., "Why do you think you succeeded on this task?"), or structured (including independent unipolar ratings of the importance of particular causes, percentage assessment of the importance of causes, bipolar ratings of the importance of causes, free choice of a single cause or multiple causes, and forced-choice formats). Suffice to say that this method variance makes it difficult to draw comparisons between studies, let alone to draw conclusions about the ecological validity of the various measurement devices.

An important study by Elig and Frieze (1979) compared a variety of methods used to assess causal attributions in adults. They found that open-ended response measures showed poorer intertest correlation validity than did the more structured methods, while rating scales provided a better fit to attribution conceptualizations than did percentage assessment methods. In general, they concluded from their investigation that scale measures displayed better psychometric properties than open-ended measures, and that measurement variations may account for a great many discrepancies in the attribution literature that focuses on adult populations. In the literature that deals with children's causal attributions, discrepant findings abound, and psychometric studies of reliability and

internal validity such as that carried out by Elig and Frieze (1979) are clearly necessary. Moreover, given the applied implications of this research for the educational field, it is also necessary to pose questions about the external validity of these diverse measurement techniques; do children's responses to these measures of causal perceptions adequately reflect their thoughts and behaviors as they perform on academic tasks in the classroom? Indeed, at least one study has raised questions about whether all children do, in fact, make causal attributions at all (Diener & Dweck, 1978). Finally, questions about predictive validity must also be raised; how well do the responses these alternative methods yield predict children's actual achievement behaviors? The present research was designed as a modest attempt to begin the task of answering these important questions.

The overall aim of the present investigation was to assess the relationship of two measures of children's perceptions of the causes of academic success and failure to reading ability in general, and to achievement behavior on a reading task in particular. Specifically, the research sought to compare the predictive validity of Crandall's Intellectual Responsibility Scale (IAR) (Crandall, Katkovsky & Crandall, 1965) with an in vivo, task-specific measure of children's causal attributions, as well as to determine the convergent validity of the two methods.

IAR

The IAR was originally designed to assess children's generalized expectancies for control of reinforcement in intellectual-achievement situations (Crandall et. al., 1965). When employed as a global measure of a child's belief in internal vs. external control over academic outcomes, the IAR has been shown by research to be moderately predictive of children's achievement test scores and report card grades (Crandall et. al., 1965; McGhee & Crandall, 1968; Messer, 1972), and moderately related to various achievement behaviors, including academic task persistence and response to reinforcement (e.g., Morris & Messer, 1978), adjustment in children with behavior problems in school (Ducette, Wolk & Soucar, 1972), and cognitive impulsivity in mildly retarded youth (Shipe, 1971).

More recently, the IAR has been employed in studies contributing to the attributional model of achievement behavior, as a direct measure of children's attributions of the causes of academic successes and failures. In one series of investigations, for example, the IAR has been used extensively as a screening device to discriminate between children manifesting cognitions and behaviors indicative of "learned helplessness", and children who are "mastery-oriented" (e.g., Diener & Dweck, 1978). While the results of such studies are generally consistent with those that employ more task-specific

measures of causal attributions for success and failure on actual experimental or academic tasks (e.g., Butkowsky & Willows, in press), little is known about the relationship between these two measurement methods. Do they, in fact, measure the same sort of cognitions? Moreover, the relative ability of these measures to yield responses predictive of specific achievement behaviors in specific situations remains unclear. Indeed, research on learned helplessness and children's causal attrbutions indicates that it is likely that children discriminate their causal perceptions of success and failure between situations or subject areas (Dweck & Reppucci, 1973). Thus, the ultimate usefulness of the IAR as a general, global measure of children's causal perceptions of success and failure in school lies in its ability to predict specific achievement behaviors in specific academic subjects or tasks.

In the present investigation, it was expected that a task-specific measure of children's causal attributions following actual success or failure on a reading task would be more highly related to children's initial expectancies of success and persistence in the face of difficulty on that task than would corresponding subscales of the IAR. Moreover, it was expected that the in vivo, task-specific measure would be more strongly related to overall relative reading ability. Finally, it was anticipated that subscales of the IAR would be only weakly related to similar dimensions of the task-specific measure.

Method

The study was conducted as part of a larger investigation aimed at assessing some cognitive-personality characteristics of children varying in reading ability (Butkowsky, 1978). There were three phases in the present research. In the first phase, Grade 5 boys were group-tested in classrooms in their schools on standardized tests of reading comprehension and non-verbal intelligence. In the second phase, selected subjects were individually administered the IAR. In the third phase, children of good, average, and poor reading ability were individually assessed on a reading task in which success and failure were manipulated. Initial expectancies of success, persistence in the face of difficulty, and causal attributions of success and failure were the major variables under consideration in this final phase.

Subjects

Subjects were 123 Grade 5 boys from regular classes in four public schools located in primarily middle-class communities. All parents of these children had signed a letter of consent allowing their children to participate in a study of "factors that influence academic achievement".

Phase 1

The purpose of this first phase of the research was to select children of relatively good, average, and poor reading ability.

Selection of subjects

Seventy-two boys were selected from the original sample. There were 24 good, 24 average, and 24 poor readers chosen on the basis of their scores on two forms of the Comprehension subtest of the Gates-MacGinitie Reading Tests (Gates & MacGinitie, 1965), and two forms of the IPAT Culture Fair Intelligence Test, a non-verbal test designed to measure general intellectual ability (Catell & Cattell, 1960). The age of subjects ranged from 9 years 9 months to 12 years 10 months with a mean age of 10 years 6 months.

Children of relatively good, average, and poor reading ability were selected using the operational procedures developed by Willows (1974; 1978). Each child's mean IQ score was used as a predictor of his reading potential, and his mean score on the reading test was taken as an index of reading performance. The size and direction of the discrepancy between predicted and obtained reading scores determined the assignment of children to good, average, and poor reading groups. Only those children who scored reliably on both forms of both tests were included in the final sample.

Table 1 presents the means and standard deviations of subjects' age, IQ, and reading comprehension scores as a function of the reading ability designation. A comparison of the mean age and IQ scores of the three resulting groups revealed no significant differences ($F < 1$). The groups did differ significantly, however, in their reading comprehension scores, $F(2, 69) = 33.38$, $p < .001$.

Insert Table 1 about here

For the purposes of the experimental design described in Phase 3, subjects were assigned to triads each containing one good, one average, and one poor reader with approximately equivalent IQ scores. There were 24 such triads for a total of 72 subjects.

Phase 2

In this phase of the research, the 24 good, 24 average, and 24 poor readers were individually administered the IAR by a second experimenter, who had no knowledge of the experimental hypotheses or children's reading comprehension and IQ scores.

Procedure

In order to minimize the possible confounding influence of reading ability in completing the scale, each of the 34 forced-choice items was read aloud by the experimenter, who then recorded the child's verbal response. Subjects entered the testing room and were seated opposite the experimenter at a small desk or table. The experimenter introduced herself and gave the following modified instructions, designed to facilitate comprehension of the task:

> "This is not a test. I am trying to find out what kids your age think about certain things. I am going to ask you some questions and you pick the answer that best describes what happens to you, or how you feel. If you don't understand a word, or you want me to repeat a question, ask me. Do you understand? All right, listen carefully and answer."

The 34 forced-choice items were preceeded by two sample questions in order to assure that children understood the task.

Phase 3

The goal of this third phase of the investigation was to assess subjects' initial expectancies of success, persistence in

the face of difficulty, and causal attributions for actual success or failure on a reading task in which outcome was manipulated.

Procedure

Each child was tested individually in a room in his school. The experimenter was blind to the level of reading ability of each child.

The "reading test" consisted of a series of 5 five-letter anagrams that previous pilot-testing had determined were solvable for children at all levels of reading ability. In the failure condition, a single letter in each anagram was changed so as to render the anagrams unsolvable. Though anagram solution is not, strictly speaking, a reading task, it was employed here because of the ease with which outcome could be manipulated, and also because children could easily be made to construe it as a test of reading ability.

Task outcome was manipulated so that one half of the subjects experienced repeated success, while the other half of the subjects experienced repeated failure. The two levels of Outcome yielded two experimental groups. Each of the triads of subjects was randomly assigned to one of the two groups. Statistical comparison of group means revealed no differences between the groups in age, IQ, or reading comprehension scores;

the analysis of variance (ANOVA) in each case yielding an F-ratio of less than 1.

Each boy entered the designated testing room and was seated at a small table on a side adjacent to the experimenter, who introduced himself and began the session with some general instructions. Subjects were told that they were there to aid the experimenter in finding out "how kids your age do on some puzzles" that he had brought with him. They were further informed that "we really don't know how kids your age do on these puzzles so you might find them easy or hard", and also that they would be asked some questions about their performance afterwards. The reference to the difficulty of the puzzles was included for ethical reasons in order to minimize any enduring effects of repeated failure on the children. Additionally, each child in the failure condition received three solvable puzzles at the end of the session, again in order to reduce any lasting effects of the failure experience.

Initial expectancy

Following the general instructions, each subject was asked a question designed to provide a quantitative measure of the child's initial expectancy of success on the reading task that followed. The question was posed as follows:

"In a few minutes you are going to take a reading

test. In this reading test you will be asked to solve five puzzles or problems. I'll explain more about it soon, but first I would like to know how well you think you will be able to do on this reading test. How many puzzles do you think you will be able to solve? Do you think you will be able to solve one of them? two of them? three of them? four of them? or all of them? Point to the box on the card that says how many of them you think you will be able to solve."

At this point the child was presented with a 29.5 cm x 12.7 cm white formboard on which was printed a series of six squares, each of which resembled the face of a die. The first square had no dots, the second square had one dot, the third square had two dots, and so on. Printed beneath each square was a statement and a figure representing the number of dots that the die contained (e.g., none of them (0); one of them (1); etc.). The child pointed to the square of his choice and the expectancy score was recorded by the experimenter.

Reading task

Specific instructions for the reading task were then supplied. A practice example was included in order to confirm the child's understanding of the task, and also to induce the expectation that the puzzles were, in fact, solvable. In order

to achieve some control over possible demand characteristics in the experimental situation, subjects were repeatedly encouraged within the instructional set to give up on any trial in which they thought they could not succeed.

Following instructions for solution of the anagram puzzles, the five anagrams were presented to the child in a random order printed on individual 20.5 cm x 12.7 cm cards. The cards were placed in a pile face down directly in front of the subject, who could go on to the next card as he wished. Scrap paper and pencils were available to those children who wanted to use them.

Persistence time

A stopwatch was used to measure the persistence time for each of the five unsolvable anagrams in the failure condition. Persistence time was defined as the amount of time between the point at which a card was turned over until the child rejected the card and pushed it aside, or turned over the next card. For the purposes of keeping the variability of scores within reasonable bounds, a time limit of 3 minutes per trial was imposed. Pilot testing had determined this to be a sufficient amount of time for most children to give up on any one trial. Time was recorded by the experimenter following each trial. The mean persistence time score was calculated for each child as the average of the five trials.

Causal attributions

Following completion of the task, subjects were asked to attribute their preceeding success or failure to one of four possible causes: ability, effort, task difficulty, or luck. The question was posed in the following manner:

> "I would like to know why you think you did (did not do) so well on this reading test. Do you think you did (did not do) so well because you are (are not) good at this, because you tried hard (could have tried harder), because it was an easy (hard) test, or because you were lucky (unlucky). Point to the card or cards that say why you think you did (did not do) so well on this reading test." (Phrases used in the failure condition are enclosed in brackets.)

The four 20.5 cm x 12.7 cm cards on which the attributional statements were printed in first-person format were placed in a random order (they were referred to in the question in the order in which they appeared) from left to right directly in front of the child. After the child had pointed to a card the experimenter asked, "Any other?" The additional choices were permitted in order to reflect the multiple determinancy of events in achievement situations. Subjects were not, however, required to make additional choices. (No child made more than

two choices.)

After testing was completed in each school, all children were debriefed and thanked for their cooperation.

Results

The IAR yields 3 scores: a total internality score (I tot), and separate subscales reflecting internality for success (I+), and internality for failure (I-). The internal success and failure subscales were also divided into subscales reflecting the two causal categories of ability (I+a, I-a) and effort (I+e, I-e) following the procedure employed by Weiner and Kukla (1970).

Each of the child's attributions of success and failure on the reading task was classified according to whether it was internal or external and stable or unstable. It was then scored on each of two scales constructed to reflect the causal dimensions of success and failure proposed by Weiner (1974). In situations where the subject made a secondary attribution discrepant from the first (for example, a primary attribution to an internal factor such as ability, and a secondary attribution to an external factor such as luck) additional weight was assigned to the first choice.

Two 4-point scales were constructed in the direction of

increasing internality and stability of the causal attributions. A "0" reflected an attribution that was completely external (both choices were classified as external or only one choice was made and that was classified as external) while a "3" reflected an attribution that was completely internal (both choices were classified as internal or only one choice was made and that was classified as internal). A primary attribution to an external factor combined with a secondary attribution to an internal factor resulted in a score of "1". Similarly, a primary attribution to an internal factor in combination with a secondary attribution to an external factor resulted in a score of "2". The stability scale was scored in an identical fashion.

For example then, if a child made an initial attribution of his success on the reading task to ability (internal-stable) and then made a secondary attribution to luck (external-unstable) he would receive scores of 2 on the internality scale and 2 on the stability scale. Similarly, if the child attributed failure on the reading task solely to lack of effort (internal-unstable), he would receive scores of 3 on the internality scale and 0 on the stability scale.

Relationship of IAR subscales and corresponding dimensions of task-specific, in vivo causal attributions

Pearson product-moment correlations were computed between children's scores on subscales of the IAR and corresponding

internality scale scores derived from children's causal attributions of success and failure on the reading task. Table 2 presents the resulting correlation coefficients.

Insert Table 2 about here

Inspection of the coefficients reveals no significant relationships between IAR subscales and corresponding dimensions of the in vivo, task-specific measure ($p > .10$ in all cases), underscoring the poor convergent validity of the two measures.

Relationships between causal attribution measures and children's initial expectancies of success, mean persistence time scores, and relative reading ability

In order to compare the predictive validity of IAR subscales and scale scores derived from the in vivo, task-specific measure of causal attributions, separate correlational analyses were performed for children in the success and failure conditions respectively. Coefficients were computed between scale scores of the two attribution measures and children's initial expectancy of success scores (success and failure conditions) and between scale scores of the two measures and children's mean persistence time scores (failure condition only). Partial correlations, controlling for the effects of IQ, were also computed between scale scores of the two attribution measures and children's mean reading comprehension scores. The partial

correlations were computed in order to maintain consistency with the definition of reading ability employed in this research.

Inspection of the correlation coefficients presented in Table 3 reveals a number of relationships that reached statistical significance (two-tailed tests). In all but one of these cases, the correlations involve scale scores derived from the in vivo, task-specific measure of children's causal attributions.

Insert Table 3 about here

Initial expectancy

Children's initial expectancies of success on the reading task were found to be positively correlated with internality scale scores (task-specific measure) in the success condition, $r(34) = .4221$, $p < .01$, and negatively correlated with internality scale scores in the failure condition, $r(34) = -.3579$, $p < .05$. The results indicate that children who expected to perform better on the reading task tended to take greater personal responsibility for a successful outcome, while blaming external factors for failure.

Children's initial estimates of success were also found to be negatively related to the stability of their causal attributions

of failure, $r(34) = -.3932$, $p < .05$. In this research, children with higher initial expectancies of success on the reading task tended to infer less stable, more modifiable causes for their failure on the task (effort and luck).

Only the I-a subscale of the IAR was found to be significantly related to children's initial expectancies of success on the reading task, $r(34) = -.3561$, $p < .05$. This relationship implies that children who gave responses to the IAR indicating that they were likely to blame a lack of ability for academic failures tended to state lower initial estimates of success on the reading task.

Persistence

No significant relationships between subscales of the IAR and children's mean persistence time in the failure condition were revealed by the correlational analyses. Persistence was, however, significantly related to the stability of children's causal attributions of failure on the task-specific measure, $r(34) = -.3356$, $p < .05$, that is, children who persisted longer in the face of difficulty on the reading task were more likely to see their failure as being due to less stable factors (effort and luck), while those children who gave up more quickly were more likely to infer stable factors for failure on the reading task (ability and task difficulty).

Relative reading ability

Only the stability of children's causal attributions of failure on the reading task was found to be significantly related to relative reading ability (mean reading comprehension scores with IQ partialled out). This partial correlation (controlling for IQ) was particularly strong, $r(33) = -.4669$, $p < .005$, accounting for almost 22 percent of the variance. In this research, children of lower relative reading ability were more likely to infer stable causes (ability and task difficulty) for failure on the reading task.

The IAR was not significantly related to children's mean reading comprehension scores whether IQ was controlled for or not ($p > .10$ in all partial and zero-order correlations). However, when subjects were collapsed across the success and failure conditions (therefore doubling the number of subjects from 36 to 72), a significant negative correlation was found between mean reading comprehension scores and scores on the I-a scale of the IAR, $r(70) = -.2817$, $p < .05$. Controlling for IQ, however, reduced this coefficient to $r(69) = -.1694$, $p > .10$. The data suggest that while absolute reading ability is related to the tendency to attribute academic failures to lack of ability, relative reading ability is not significantly related to this generalized tendency. A small but significant correlation between IQ and the I-a subscale of the IAR, $r(70) = -.2420$, $p < .05$ supports the notion that it is IQ and not

reading ability that is related to this attributional preference, that is, relatively brighter children were less likely on the IAR to infer a generalized lack of ability as the cause of their academic failures .

Learned helplessness

As an additional check on the predictive validity of the IAR, the Diener and Dweck procedure for distinguishing learned helpless from mastery-oriented children was applied to children's scores on the IAR (median-split on the I-e subscale; Diener & Dweck, 1978). A 2 x 3 unequal N's ANOVA was then carried out on children's initial expectancy and mean persistence time scores, with I-e scores (high, low) and Reading level (good, average, poor) serving as between-subjects variables.

Results in both analyses revealed that only the main effect of Reading level was significant, $F(2, 66) = 31.386$, $p < .001$, and $F(2, 30) = 19.573$, $p < .001$, for children's expectancy and mean persistence time scores respectively. The mean initial expectancy and mean persistence time scores as a function of Reading level are presented in Table 4.

Insert Table 4 about here

Inspection of the means indicates that it was the poor readers in this research who displayed the relatively low expectancies of success and lower persistence in the face of difficulty associated with learned helplessness. That the median-split on the I-e subscale of the IAR failed to distinguish subjects on either of these dependent measures is somewhat surprising, given the previous success of this procedure in doing so (e.g., Diener & Dweck, 1978). A possible explanation of this discrepant finding is presented in the discussion below.

Discussion

There were two major goals of this research. The first was to assess the relationship between two methods of measuring children's causal perceptions of success and failure in achievement situations. One method, the IAR, represented a scale said to measure children's global attributions of success and failure in intellectual-achievement situations in general. On this scale, children respond to hypothetical, or recalled outcomes. The second method assessed children's specific causal attributions to an actually experienced outcome on a specific academic task.

A second goal of the study was to determine the extent to which the two measures were related to actual achievement behaviors on a reading task, and to reading ability in general.

Relationship between the IAR and an in vivo, task-specific measure

In this research, the two methods of assessing children's causal attributions of success and failure demonstrated poor convergent validity. Weak, but significant correlations were expected between corresponding subscales of the measures. Surprisingly, the results showed no such statistically significant relationships. Essentially, it is only possible to conclude from this data that the two scales appear to be measuring rather different sets of cognitions. It is difficult, however, to speculate with any certainty about the critical differences between the measures. One important parameter suggested by the literature relates to the "global" versus "specific" nature of the causal attributions tapped by the two scales (Abramson, Seligman, & Teasdale, 1978). The actual experience of success and failure in the experimental setting, in contrast with outcomes imagined or recalled, may also influence the child's causal perceptions in a specific situation.

Relationship of attributional measures to expectancy, persistence, and relative reading ability

In general, the results of this investigation indicate that an in vivo, task-specific measure of children's causal attributions is a better predictor of children's achievement behavior than is the more global and general IAR. This was evidenced in the relative strength of the relationships between

the two measures and children's expectancy of success and persistence on a reading task. The findings are consistent with those of Andrews & Debus (1978) who also compared the IAR with a more situational measure of causal attributions. They found that a direct, situational measure was more strongly related to task persistence than the IAR, and concluded that,

> "....the use of attributional patterns behaviorally assessed for specific situations may often be more useful than a general measure such as the IAR as the sole means of attributional assessment." (Andrews & Debus, 1978; p. 158)

There exists a burgeoning body of literature in educational research that deals with the importance of children's perceptions of the causes of academic success and failure in mediating subsequent achievement behavior. In light of the findings of Andrews & Debus (1978), and those of the present study, conclusions based on the use of the IAR in such research must be seriously questioned. Indeed, previously significant findings may be an artifact of the use in studies of general, experimental tasks unrelated to specific school subjects. The use of global, generalized measures such as the IAR may result in misleading conclusions with regard to children's perceptions and behavior in specific situations. When specific achievement behaviors on specific academic tasks are the object of prediction, the use of in vivo, task-specific measures is strongly advised.

Consistent with previous research (e.g., Butkowsky & Willows, in press; and see Weiner, 1977; 1979 for reviews), the present findings also indicate that the stability of children's causal attributions for success and failure is significantly related to children's initial expectancies of success, their persistence in the face of difficulty, and their overall relative reading ability. The results underscore the importance of assessing this dimension of causal attributions, a dimension not directly measured by the IAR.

That the IAR was not found to be directly related to children's mean reading comprehension scores is discrepant with the conclusions of other investigations that generally find a moderate, but significant relationship of the IAR with achievement test scores, even when the effects of IQ are statistically controlled (e.g., Messer, 1972). It is difficult to rule out any of a number of possible explanations for this discrepancy, including differences between this and other studies in the administration of the IAR (interview format vs. paper-and-pencil format, individual vs. group assessment, etc.) and differences in the particular instruments used to measure achievement and IQ. No firm conclusions about the validity of the IAR in relation to the prediction of achievement test scores can therefore be offered.

Learned helplessness

One puzzling difference between the results of the present investigation and other studies (e.g., Diener & Dweck, 1978; Dweck, 1975; Dweck & Reppucci, 1973) was the failure of the IAR to discriminate subjects manifesting aspects of learned helplessness on the reading task. In this study, it was children of relatively poor reading ability who displayed the lower expectancies of success and lack of persistence characteristic of helpless behavior, irrespective of their responses to the IAR. A possible explanation for this discrepant finding lies in a critical methodological difference between this investigation and the others. In the majority of studies that assess learned helplessness in children, subjects are first exposed to varying amounts of helplessness training (varying proportions of failure to success trials). Indices of learned helplessness (e.g., expectancy, persistence) are then measured on a subsequent task. These studies therefore, in effect measure children's differential sensitivity to the helplessness induction employed in the particular design. They do not measure the extent to which children naturally manifest learned helplessness in some situation in their environment.

In contrast, in the present investigation it was assumed that children who vary in relative reading ability have already experienced various degrees of "helplessness training" as a consequence of their prior experience on reading-related tasks.

Aspects of learned helplessness were therefore assessed directly on a reading task, without first exposing children to any helplessness training. The implication is that the IAR may be more successful in predicting children's sensitivity to helplessness inductions than it is in predicting the extent to which children naturally manifest helpless behaviors and cognitions in a specific academic area. More definitive conclusions must, however, be witheld until future research can test the effects of these methodological differences more directly.

Conclusions

The findings discussed above illustrate the need for more and better empirical studies to explore the consequences of measurement differences in the assessment of children's causal attributions. They emphasize the importance of carrying out more sophisticated psychometric investigations of the reliability and validity of the various assessment techniques, and serve to caution those clinicians and educators who may prematurely interpret findings and apply them to the classroom context.

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Table 1

Means and standard deviations of good, average, and poor readers on age, IQ, and reading comprehension

	Good readers		Average readers		Poor readers	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Age	10.36	.45	10.22	.30	10.40	.76
IQ	111.19	11.95	110.54	11.88	110.75	11.30
Reading comprehension	60.19	6.99	52.19	5.72	45.17	6.35

Table 2

Correlations of IAR subscales and corresponding scale scores derived from in vivo, task-specific measure (df = 34)

	IAR			
	I+	I+a	I+e	Itot
Internality for success	.0775	.2503	-.1081	-.0132
	I-	I-a	I-e	Itot
Internality for failure	.0297	.0495	.0062	-.1508

Table 3

Correlations of initial expectancy, persistence, and relative reading ability with IAR subscales and scale scores derived from the in vivo, task-specific measure

Success condition

	Initial expectancy (df = 34)	Relative reading ability (df = 33)
I+	-.0219	-.0211
I+a	.2081	.0640
I+e	-.2174	-.0889
Itot	-.1762	-.0274
Internality	.4221**	-.0055
Stability	.0896	-.0909

Failure condition

	Initial expectancy (df = 34)	Persistence (df = 34)	Relative reading ability (df = 33)
I-	-.2993	-.0133	.0079
I-a	-.3561*	-.0390	-.1390
I-e	.1532	-.1909	.0974
Itot	-.1481	.0699	-.1039
Internality	-.3579*	-.1909	-.1980
Stability	-.3932*	-.3356*	-.4669***

*p less than .05
**p less than .01
***p less than .005

Table 4

Children's mean initial expectancy and mean persistence time scores as a function of relative reading ability

	Good readers	Average readers	Poor readers
Initial expectancy	4.375	3.750	3.000
Persistence time	156.455	157.507	89.710